

RESIDENT AND REGULAR MIGRANT BUTTERFLIES ON THE ISLES OF SCILLY

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Abstract

The butterfly fauna of the Isles of Scilly is reviewed on the basis of regular recording since 1975 and with reference to earlier published lists. The history and current status of the species are discussed.

Introduction

In 1976, I published an account of the butterflies recorded on the Isles of Scilly during August 1975; this has been cited in a number of subsequent descriptions of the islands' butterfly fauna (Agassiz, 1981; Smith, 1997; Dennis & Shreeve, 1996). I visited the islands again in August 1976, but did not return until August 1988. Since then I have visited almost annually (August 1989, June 1990, June 1991, June 1992, August 1995, June 1996, April/May 1997, April 1998, August 1999, July 2001, July 2002, July 2003). Although several local lists have been published over the last three decades, these still do not always distinguish clearly between long-standing residents, recent colonists, and casual introductions or vagrants. Doubt is often expressed as to which category certain species fall into, but records and observations compiled over the course of regular visits at different times of year can shed light on their history and status.

Although it may once have been believed that the butterfly fauna of the Isles of Scilly has been more or less static since recolonisation at the end of the last glaciation, it has by now become clear that the fauna of offshore islands is subject to a constant but unpredictable succession of colonisation and extinction events (Dennis & Shreeve, 1996). Dennis and Shreeve comment on the difficulties of documenting the history of such events, despite their undoubted occurrence and inherent interest, but sufficient data is now available to begin to draw some conclusions about the butterfly fauna of the Isles of Scilly. It is evident that the islands' species list is constantly changing, with species unpredictably appearing and disappearing, along with considerable evidence for what Dennis and Shreeve characterise as 'potential colonisation' (records of isolated individuals with no evidence of permanent establishment).

In view of the absence of its foodplants, the three twentieth century records of *Gonepteryx rhamni* (L.) (Penhallurick, 1996; Smith, 1997) are obvious examples of 'potential colonisation'. Because of the paucity of recorders at that time, it is impossible to know whether *Nymphalis polychloros* (L.) was ever established on Tresco in the 1930s (Richardson & Merc, 1958), but it is obviously long gone. *Lasiommata megera* (L.), listed as a resident in two recent lists (Spalding & Sargeant, 2000; Wacher, Worth & Spalding, 2003), may once have been temporarily established, as a cluster of records from 1962-1963 (Smith, 1997) might suggest, but

was not seen by Richardson and Mere in the 1950s (or by any earlier observers) and has certainly not been resident in the period since 1975. On the other hand, local naturalists report that *Pararge aegeria insula* is still regularly mistaken for *L. megera* by inexperienced observers, so some records of the latter may be misidentifications. Penhallurick (1996) cites evidence that *L. megera* is a migrant to Scilly. Published records (Smith, 1997) of *Coenonympha pamphilus* (Linnaeus), definitely not a resident today, have also, and more unanimously, been attributed to migration (Penhallurick, 1996; Spalding & Sargeant, 2000; Wacher, Worth & Spalding, 2003).

As for the more recent isolated records (documented by Smith, 1997 & 2002) of *Anthocharis cardamines* (Linnaeus), *Ladoga camilla* (L.) and *Polygonia c-album* (L.), there is no evidence that any of these have ever established a breeding population on the islands. *P. c-album* is listed as a definite or possible resident in recent lists (Spalding & Sargeant, 2000; Wacher, Worth & Spalding, 2003) but should be regarded, as it is by Penhallurick (1996), at present as an occasional migrant. The record of *Plebejus argus* (L.) mentioned in Emmet & Heath (1989) cannot be substantiated, and is undoubtedly the result of a misidentification (Smith, 1997 and personal communication). The unconfirmed record of *Pyronia tithonus* (L.) mentioned by Smith (1997) is also most likely to be an error.

Excepting the above and such well-known rare migrants as *Danaus plexippus* (L.), the islands' current butterfly fauna consists of three long established sedentary residents (*Lycaena phlaeas*, *Polyommatus icarus* and *Maniola jurtina*); three current residents with curiously intermittent histories (*Pieris napi*, *Inachis io* and *Pararge aegeria*); six regular migrants or residents supported by migration; and two modern colonists (*Celastrina argiolus* and *Aphantopus hyperantus*) whose abrupt appearance in recent times is well documented. The islands' Hymenoptera fauna shows a similar pattern, with conspicuous species like *Andrena flavipes* Panzer being well established by the 1990s, but unrecorded by extensive surveys in the 1960s (Beavis, 2000), and others like *Bombus pratorum* (Linnaeus) appearing since 2000 (Beavis, 2003).

Although many records have been published from the smaller uninhabited islands, the following account is mainly concerned with the five inhabited islands of St Mary's, Tresco, St Martin's, St Agnes and Bryher. Gugh, with two houses and linked to St Agnes by a tidal sand-bar, is sometimes included as a sixth inhabited island; here the phrase 'all the inhabited islands' should be taken as excluding Gugh unless otherwise stated. For present purposes, butterfly habitats may be conveniently divided into coastal and inland categories. Coastal habitats consist mainly of sand dunes, heathland and grassland; since the 1950s there has been considerable encroachment of bracken following the decline of grazing. Tall bracken stands and windbreak trees and shrubs create sheltered areas along a coastline that would otherwise be entirely open. Inland habitats include, along with lanes and farmland, a number of areas of woodland planted as windbreaks. There are also wetland areas including the fringes of the large bodies of fresh water that occur on all the inhabited islands except St Martin's; the two major 'pools' on St Mary's are surrounded by extensive areas of reed beds, damp meadows and secondary woodland, which are known as Lower and Higher Moors.

Systematic list

Pieridae

Colias croceus (Geoffroy)

Since 1975, I have recorded the Clouded Yellow on only a few occasions. Although 'common in some years' (Agassiz, 1981) such as the summer of 1998 when breeding occurred (Hicks & Hale, 1998), and recorded from all the inhabited islands (Dennis & Shreeve, 1996), it is clearly very irregular in its occurrence. Hicks and Hale (1998) report that currently on St Agnes 'sightings vary annually from nil to six' (apart from the exceptional year of 1998).

Pieris brassicae (Linnaeus)

In 1975 I found the Large White to be 'fairly common', as it was in 1976. Since 1988 I have recorded the Large White regularly, but not commonly, from a variety of inland and coastal sites on all the inhabited islands. It is probably a largely migratory species in Scilly, lacking a strong permanently resident population, especially in wild habitats.

Pieris rapae (Linnaeus)

Since 1988 I have recorded the Small White regularly from inland and coastal sites on all the inhabited islands, but (apart from an occasional migrant influx) have not found it to be particularly common or numerous. As with the Large White, it is presumably a largely migratory and synanthropic species in Scilly, but unlike that species there is some evidence for continuity in wild habitats such as Lower Moors on St Mary's.

Pieris napi (Linnaeus)

The Green-veined White has an ambiguous history in Scilly, as it was said to be common by Blair in 1925, but was not reported by Richardson and Mere in the 1950s. It seems not to have been recorded again until 1961 (Smith, 1997). Although some recent authors cast doubt on its resident status (Wacher, Worth & Spalding, 2003), it is undoubtedly resident at the present time, and has been since at least the 1970s. Currently it appears to have its strongest populations on St Mary's. I have recorded it regularly from the wetland areas of Lower Moors, Higher Moors and Holy Vale, with a scattering of records from other sheltered inland and coastal sites. The only other islands on which I have found it are Treco (occasionally from 1995, mostly around Great Pool and Abbey Pool) and St Martin's (once in 1976). There are records from the other inhabited islands (Penhallurick, 1996), but it is clearly not permanently established on St Agnes (Hicks & Hale, 1998) or Bryher.

Lycaenidae

Lycaena phlaeas (Linnaeus)

Since 1975 the Small Copper, an old established resident, has proved to be common on all the inhabited islands (including Gugh), although (in contrast to the Common Blue, with which it shares its habitat) it never occurs in numbers. It occurs mostly in open grassland and heathland on the coast, with relatively few inland records.

Polyommatus icarus (Rottemburg)

The Common Blue is currently one of the three commonest resident butterflies, widespread and often numerous in coastal heathland and grassland on all the inhabited islands (including Gugh). Like the Small Copper, it is less common at inland sites such as the Moors of St Mary's. Ford's (1945) description of an alleged local race on the uninhabited island of Tean, characterised by females with silvery blue scales and a high proportion of certain underside aberrations, has inspired great interest, and a number of unsuccessful attempts have been made to rediscover it (Barrington, 1996; Smith, 1997). Unfortunately, as Barrington describes in some detail, that island's habitat has deteriorated greatly since Ford's day, with encroachment of bracken and bramble over most of the open ground which this species

formerly inhabited. This had already happened by the time of my first visit in 1975, when the population of *P. icarus* was found to have become extremely sparse. However, as Dennis (1977) and Barrington point out, the underside characters supposed to be a distinctive feature of the Tean butterflies are in fact not uncommon among those of the islands in general. It is also the case that striking female forms with extensive light blue coloration do occur, in some years not uncommonly, on St Mary's and other inhabited islands. It would seem that through long isolation the Scillonian population of *P. icarus* as a whole has come to exhibit distinctive features; namely, a tendency to produce unusual female colour forms and certain underside aberrations at a higher frequency than in mainland Britain.

Celastrina argiolus (Linnaeus)

The Holly Blue is undoubtedly a recent colonist, first recorded in the 1970s. Previous authors (such as Smith, 1997) have given the earliest record as being from St Mary's in 1977, although Penhallurick (1996) comments on the fact that a post-1961 record (for which he could not locate the source) from Scilly features on the Biological Record Centre's distribution maps as published by Howarth in 1973. There are in fact three specimens on display in the Isles of Scilly Museum with data labels indicating that they were taken on St Mary's in April 1973. Although these represent the earliest records so far known, they do not necessarily explain Penhallurick's puzzle, since the maps in Howarth are said to include only records up to June 1972. Records from Tresco seem to begin in October 1978 (Penhallurick, 1996; Smith, 1997). I saw no sign of this species in 1975 and 1976, but it was in evidence on my return in 1988. Agassiz (1981) describes it as 'fairly common', the same status as he gives for *Polyommatus icarus*, but I have found it to be much more localised and less numerous than the latter. It is seen most frequently at inland sites like the Abbey Gardens on Tresco or the Moors of St Mary's, but it also occurs in sheltered spots near the coast. Although the strongest populations appear to be on St Mary's and Tresco, it is also resident on St Agnes (Hicks & Hale, 1998). Although it has been recorded from St Martin's and Bryher (Dennis & Shreeve, 1996), it is probably not currently resident on these two islands.

Nymphalidae

Vanessa atalanta (Linnaeus)

Generally the commonest nymphalid on all the inhabited islands (including Gugh), the Red Admiral is more frequent in some years than in others, but with a population that displays considerably more stability than the next species. It appears in a wide variety of inland and coastal habitats. On St Mary's inland records are in the majority, and here a marked tendency from the 1990s towards yearly recurrence at sites such as the Moors may suggest a more or less permanent resident population. Hicks and Hale (1998) report evidence suggesting overwintering on St Agnes in the 1990s.

Cynthia cardui (Linnaeus)

The Painted Lady is common in favoured years (such as 1996) on all the inhabited islands (including Gugh), but at other times apparently absent. This pattern of records, combined with a strong bias towards open ground on the coast, presents a marked contrast with the preceding, confirming the impression of a species dependent on migration for its continued occurrence on the islands. Breeding takes place in some years, and there was evidence of overwintering in 1994-5 (Hicks & Hale, 1998).

Aglais urticae (Linnaeus)

Since 1975 I have recorded the Small Tortoiseshell regularly on all the inhabited islands (including Gugh), although it has not been a particularly numerous species. The population appears to be stable, with no evidence of the marked population crash that occurred in recent years in mainland Britain. It is found in a variety of inland and coastal sites.

Inachis io (Linnaeus)

Although records of the Peacock exist from all the inhabited islands (Dennis & Shreeve, 1996), and it is generally accepted as a resident, I have found this to be a surprisingly scarce species. Since 1975 (when only three were noted), I have only seven records from St Mary's, four from Tresco and one from St Martin's. Six of these records were in 2003, and the rest between 1995 and 1998. Its history on Scilly is difficult to interpret, as Blair (1925) spoke of it as fairly common, Richardson and Mere (1958) failed to record it, while Agassiz (1981) described it as common. Bletcher (1978) suggests it is only common in some years (local naturalists have told me similarly that it has 'good and bad years'), and Hicks & Hale (1998), speaking of St Agnes in the 1990s, describe it as rare. It could be mainly migratory, with an intermittent resident population.

Pararge aegeria insula Howarth.

Apart from two old records (from 1903 and the 1920s), the Speckled Wood was not definitely recorded from Scilly until 1967 (Smith, 1997), although it has subsequently become one of the islands' commonest species. Even as early as 1971 it is described as being 'abundant' (Summers, 1975). Since the island subspecies is so clearly distinct from *P. aegeria tircis* (Godart) of mainland Britain, it would be natural to assume that this butterfly must have existed continuously on the islands for thousands of years. On the other hand, it is difficult to believe that such a conspicuous insect (whose habit of resting on sunlit foliage beside footpaths brings it naturally to the attention of any passing observer) could have remained unseen for so many decades, even escaping the surveys of Richardson and Mere in the 1950s. Some authors (such as Penhallurick, 1996) therefore regard its current status as that of a recent colonist. In that case, the two old records would represent either 'potential colonisation' that came to nothing, or a former period of temporary establishment that ended in extinction. Another curious fact is the existence of a remarkably similar form on the Channel Islands (comparing specimens from Guernsey and Scilly, I find that collectively they are indistinguishable); but this could support either theory regarding the Speckled Wood's status on Scilly. There is certainly some biogeographic link between the Isles of Scilly and the Channel Islands, since some undoubtedly endemic Scillonian forms among the Hymenoptera have corresponding races on the latter. Richardson (1978) described *Andrena thoracica sarnia* from specimens taken on both groups of islands, and attributed Alderney specimens of *Bombus uuseorum* (Linnaeus) to his subspecies *scyllonius*. It could, however, be argued that the current population of the Speckled Wood in Scilly results from a colonisation event that took place in the late 1960s, but that the source of colonisation was the Channel Islands rather than mainland Britain.

Since 1975 I have found this butterfly to be one of the three commonest species. It occurs, often in numbers, in shady spots on all the inhabited islands (including Gugh). Its core populations seem to be associated with inland habitats such as tree-fringed lanes, wooded areas, and sheltered wetlands like the Moors of St Mary's, but it is often to be found on the coast too, wherever the cliff paths are shaded by tall foliage such as bracken and brambles.

Maniola jurtina cassiteridum Graves

The Meadow Brown, an old established resident, is one of the three commonest butterflies and probably the most ubiquitous on all the inhabited islands (including Gugh). Most characteristic of open ground, whether on the coast or inland, where it is often numerous, it also shares some of the more sheltered spots (such as the Moors of St Mary's and Abbey Wood on Tresco) with the preceding. Although the status of the islands' population as an endemic subspecies has been disputed, it undoubtedly has a strong tendency to produce more brightly coloured upperside forms (with extended light patches in both sexes) and more contrasting undersides than is usual in mainland Britain.

Aphantopus hyperantus (Linnaeus)

The Ringlet is the islands' most recent colonist (Smith, 2002), and at present its establishment seems to have been highly successful. It was first recorded from St Martin's in July 1995 (Wagstaff, 2002), and in the following year it was found also on St Mary's and Tresco. There have, however, been few subsequent records from Tresco (Wagstaff, 2002). In July 2001-2003 I found this species to be well established and widespread on St Mary's and St Martin's. As well as isolated singles, there was a distinct pattern of localised pockets of activity, with up to twelve individuals flying within a small area. Its habitat consisted of shady inland tracks and footpaths, wooded areas, and sheltered spots on coastal paths.

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